# Chapter 8
# Public Services and Facilities

## Introduction

Volume II of the Public Services and Facilities Element provides information on existing public services in Douglas County, including public safety, libraries, schools, and water and wastewater.

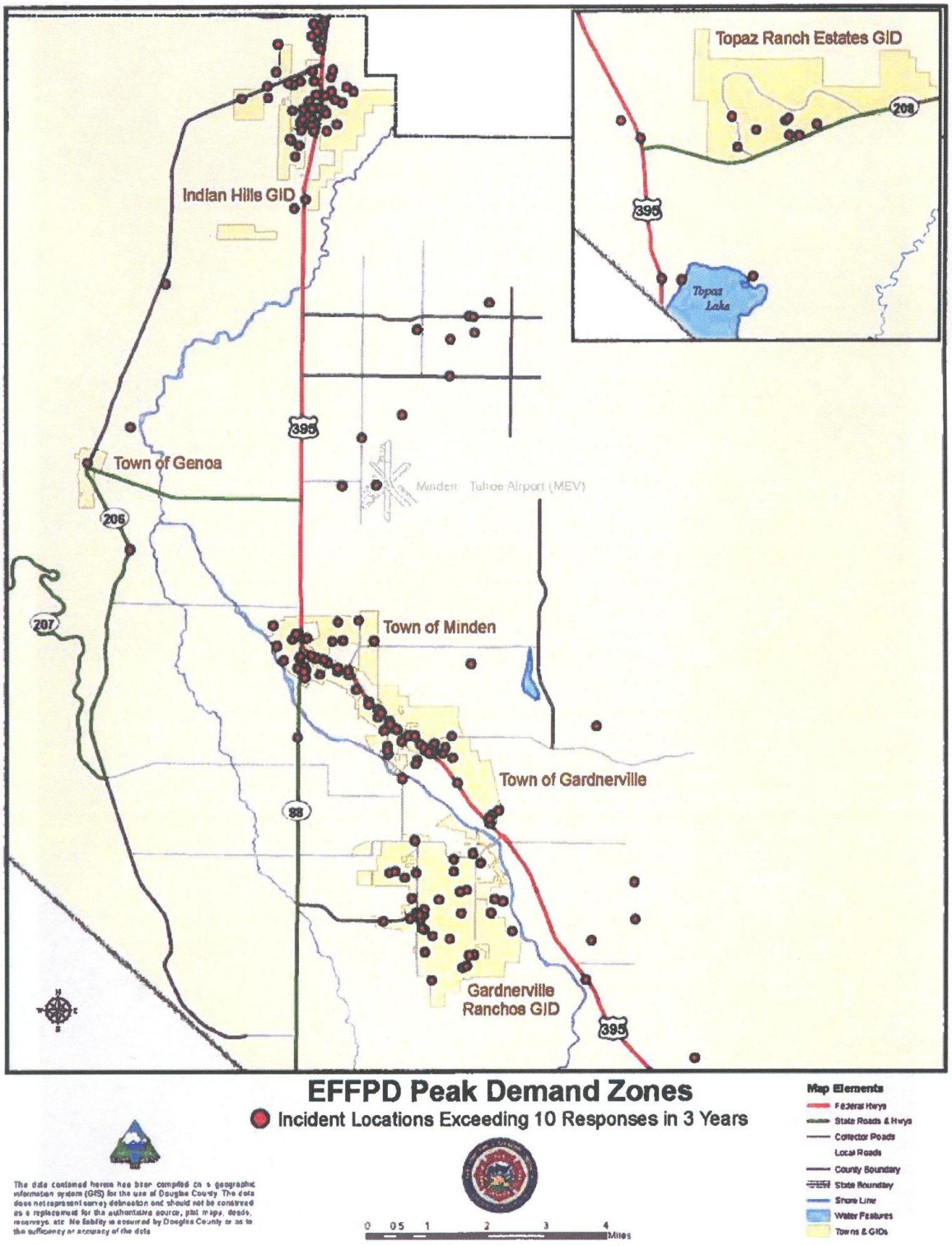
## Public Safety

East Fork Fire and Paramedic District

*Peak Demand Zones*

Peak demand zones are locations where crews frequently respond for a variety of reasons. Since the East Fork Fire and Paramedic District (EFFPD) responds to these locations on a frequent basis, crews must be familiar with them and ensure an adequate response to mitigate their common incidents. Peak demand zones include many of our assisted living facilities, high-density housing, medical facilities and some higher risk intersections. Map 8.1 highlights incident locations exceeding 10 responses in three years, referred to as Peak Demand Zones.

**Map 8.1**
**East Fork Fire and Paramedic District Peak Demand Zones**



*Response Time and Staffing*

Response time elements are a cascade of events. This cascade is used to describe events leading up to the initiation, mitigation, and ultimate outcome of an event. It should be kept in mind that certain intervals described can be directly influenced by the fire service (i.e., turnout time interval and travel interval) and the 911 call center (i.e., call processing time), while others can be influenced indirectly (through public education, engineering initiatives, and standards).

Taking into consideration national standards and advances in Douglas County's Geographic Information Systems (GIS) and East Forks' Risk Management System (R.M.S.) abilities, the following customized response time limits were adopted in the Standards of Cover:

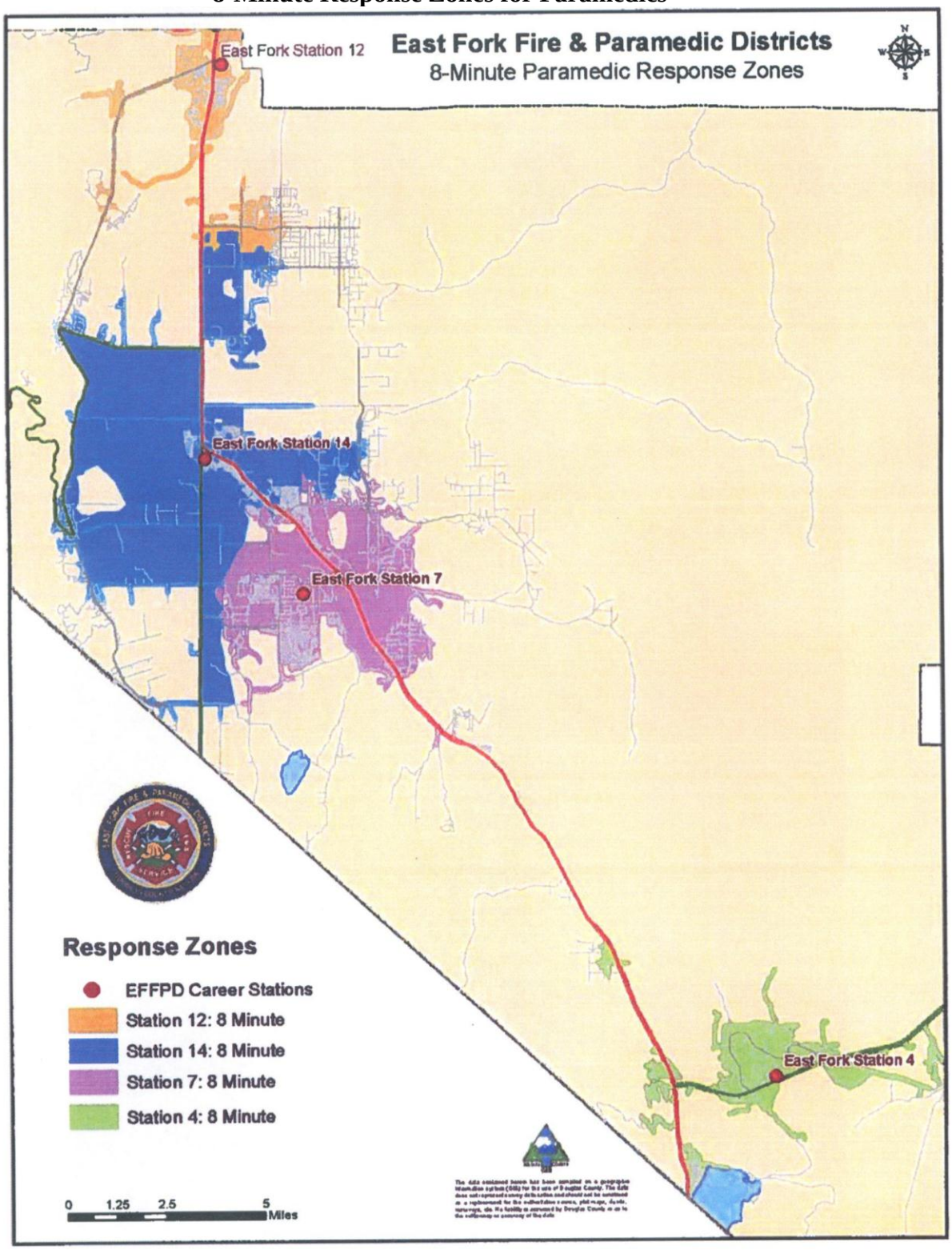
1. Douglas County 911 Emergency Services will answer all 911 calls on the first ring 95 percent of the time.

2. Career station turnout time should be 60 seconds or less during the day and 80 seconds or less during bedtime hours, 90 percent of the time.

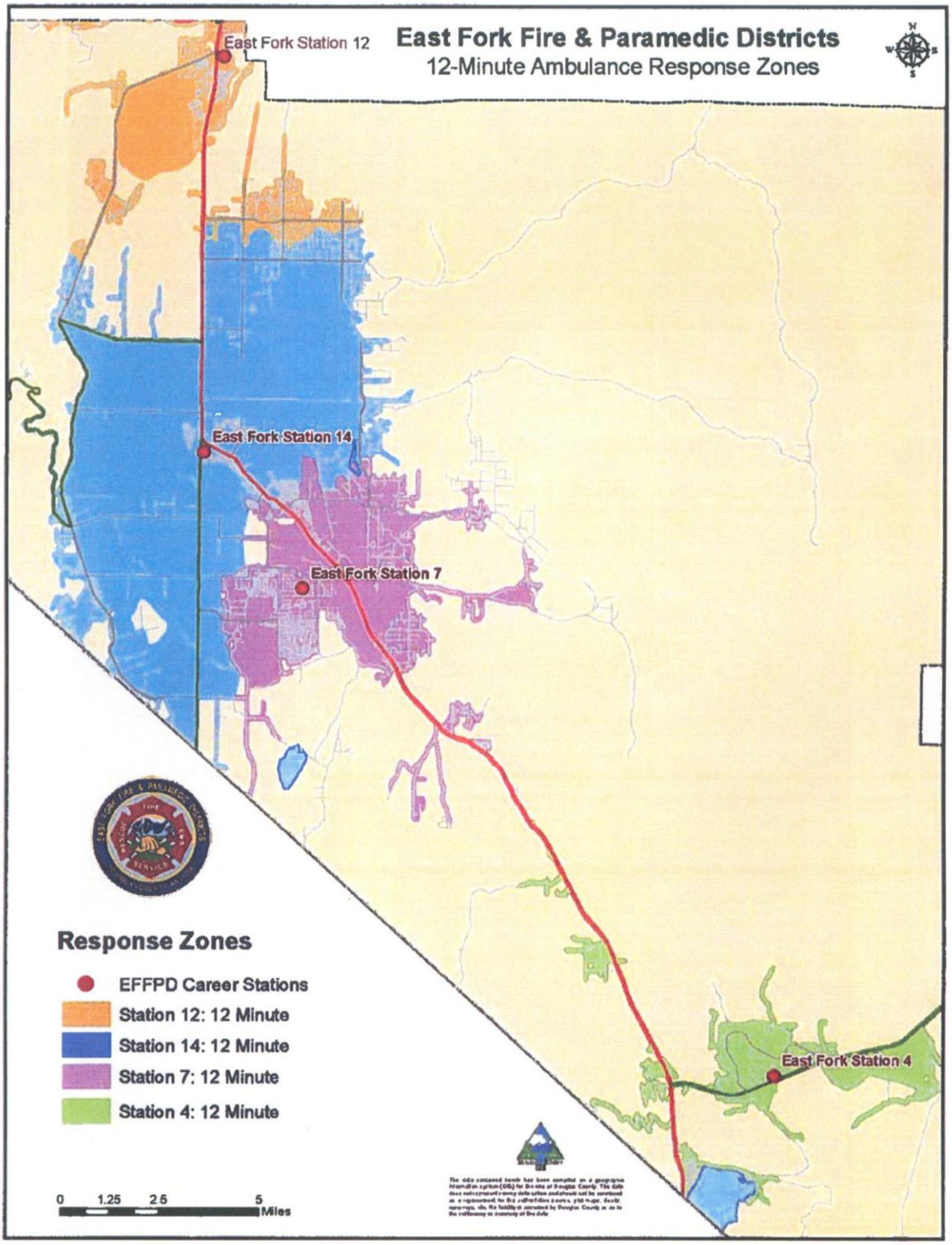
3. All calls requiring an emergency response will be dispatched on a Priority Based Dispatching basis.

Map 8.2 shows the 8-minute response capabilities for a paramedic equipped engine company and Map 8.3 shows the 12-minute response capabilities for an ambulance responding from the existing four career stations. The Standards of Cover recommends adopting career and volunteer response zones.

**Map 8.2**
**8-Minute Response Zones for Paramedics**



**Map 8.3**
**12-Minute Ambulance Response Zones**



*Insurance Service Office/Commercial Risk Services Inc. (ISO)*

The Insurance Service Office/Commercial Risk Services Inc. (ISO) provides, through their Fire Suppression Rating Schedule, a tool for the insurance industry to measure quantitatively the major elements of a community's fire suppression system. Measurements for these elements are then developed into a Public Protection Classification number on a relative scale of 1 to 10. A Public Protection Class is an important number used by the insurance industry to determine fire insurance premiums for both commercial and residential property. Generally, citizens can expect to pay lower property insurance premiums when their community achieves an improved Public Protection Classification. East Fork Fire Districts' experienced this within the last few years with a reduction in its Public Protection Classification to a Class 3 for 85 percent of the East Fork Fire District from a Class 6. Other very remote areas are classified as a Class 8.

*Volunteers*

Volunteers have long been, and continue to be, a critical component to the overall effective delivery of fire emergency services in Douglas County. As of January 2012, there were 44 "attack" volunteers and 50 "support" volunteers. "Attack" volunteers must meet the physical fitness requirements of the Districts and obtain basic training in all four main areas of service delivery: structure fire, wildland fire, hazardous materials response, and basic medical response with CPR and first aid training.

For some time, the ranks of the volunteer component of the Districts have been decreasing for a number of reasons: the state of the economy and employment opportunities within the county, significant demographic changes within the county, increasing training and federally mandated requirements, the time commitment required, perceived volunteer/career competition, among other reasons. Accordingly, the District Fire Chief and the Volunteer Fire Chiefs' Advisory Board have embarked on an aggressive and comprehensive recruitment campaign that began in the summer of 2011. This campaign recognizes the importance of having a viable volunteer component within the full scope of resources available to the Districts working complementary with the career staff and not in competition.

Tahoe Douglas Fire Protection District

*Response Times*

In responding to emergencies within the Tahoe Douglas Fire Protection District (TDFPD) boundaries, it is the goal of the District to attain the response time objectives in Figure 8.1 90 percent of the time:

**Figure 8.1**
**Tahoe Douglas Fire Protection District Response Times**

| | |
|---|---|
| *Alarm processing: | 50 seconds |
| Turnout time: | 60 seconds |
| Travel time of first due unit: | 5 minutes |

"Emergency Response" is any request for service to mitigate an immediate threat to life, limb, property or the environment. Examples of emergency response would be structure, wildland, and miscellaneous fires, medical emergencies, vehicle accidents, hazardous materials incidents, explosives incidents and physical rescues (water, ice, rope).

Examples of urgent or non-emergency responses would be requests for non-emergency transport from medical clinics, delayed patient arrival transports from ski areas, public assistance requests, smoke investigations, some types of explosive ordnance disposal requests, move-up assignments, and long distance strike team response.

Figure 8.2 outlines the minimum response objectives for a majority of the typical risks encountered by the TDFPD.

**Figure 8.2**
**Tahoe Douglas Fire Protection District Response Objectives**

| | Number of Companies | Total Personnel | Engine Company Minimum | 2nd Due Company Minimum | 3rd Due Company Minimum |
|---|---|---|---|---|---|
| Structure Fire | 3 | 10-12 | 2** | 2** | 2** |
| Wildland Fire | 3*** | 10 | 3** | 3** | 3** |
| Medical Aid | 2* | 4/5* | 2 | N/A | N/A |
| Traffic Collision | 3 | 7 | 2 | 2 | On Request 2 |
| All Other Risks | 2 | 4 | 2 | 2 | On Request 2 |

*Some Medical Aid requests warrant the response of a medic unit without an engine company, such as inter-facility transfers. "Total Personnel" includes the closest engine company to ensure that patient care is initiated in a timely manner.
**Engine Company Minimums will vary depending on daily staffing level.
***May also include Water Tender and Zephyr Crew response.

*Services*

Along with providing standard fire protection and EMS, the TDFPD provides the following services:

*Explosive Ordnance Disposal*

**Engine and Bomb Squad Robot**

The TDFPD, in conjunction with the Douglas County Sheriff's Office, facilitates the Tahoe Douglas Bomb Squad to provide a front line response to incidents involving weapons of mass destruction, bombs, suspected bombs, explosives, shock sensitive materials, and accidental explosions. The Bomb Squad provides these services throughout Douglas County. Additionally, the City of South Lake Tahoe, Carson City, the Legislative Counsel Bureau and Capitol Police obtain explosive ordnance devise (EOD) service under a service contract agreement. Other jurisdictions are provided EOD service, as needed, under a fee for service agreement.

The Bomb Squad also participates in the Northern Nevada Bomb Technicians Federal Task Force. This is a working group comprised of the Consolidated Bomb Squad Reno, Elko Bomb Squad, Placer County Sheriff's Bomb Squad, Tahoe Douglas Bomb Squad and the FBI.

The Tahoe Douglas Bomb Squad is widely recognized for teaching bomb threat awareness and public safety programs to government agencies and the general public throughout the nation and abroad. The squad also assists agencies and businesses in developing emergency response plans for bomb threats, bombing incidents and other related matters.

*Rescue Service*

Severe terrain, unpredictable climate, and diverse recreational activities in the Tahoe Basin all contribute to an unusually high number of rescue calls. These types of alarms are generally outside the normal scope of response for fire departments. This fact, coupled with the industrial sectors reliance on the District for rescue services, has created a need for several specialized rescue programs. The District continues to be proactive in this regard. District personnel perform technical rope rescue, boat based water rescue, ice rescue, and confined space rescue. The Water Rescue Program, which is operated from Station #23 (Marine #23), is the only water rescue service available 24/7 on Lake Tahoe.

*Vehicle Extraction*

The District has taken an aggressive stance in regard to vehicle extrication, due in part to the high traffic volume that travels through the area. The District provides "state of the art" vehicle extrication services utilizing cutting edge equipment and well-trained personnel. The District will continue to maintain this high level of service.

*Fire Prevention*

The TDFPD is committed to protecting the community from the impacts of fires and other emergencies. The Fire Prevention Department achieves this goal by implementing strategies in accordance with the National Fire Protection Association (NFPA) and other national standards. Accordingly, the District strives to prevent fires and other emergencies from occurring. One focus is to educate the community on how to prepare for, prevent, and if necessary, react to fires, medical emergencies, and other life or property-threatening situations. Another major focus is the business life safety inspection program. The life safety inspection program serves as both an educational tool and a means to ensure that fire hazards are abated. Fire Extinguisher training is offered to businesses for free. Plan reviews and inspections are completed on any new or modified construction. Operational permits are processed for special events, or other potential risk activities.

*Fire and Life Public Education Program*

The Fire and Life Safety Public Education Program consists of a variety of programs, including school programs that focus on pre-school, elementary, and middle school students to inform them about the hazards of fire and other emergencies. Curriculums and activities may include: Project S.A.F.E. (Student Activities for Emergencies), Winter Survival, Dialing 911, Fire Safety House, Boating and Water Safety, CPR/First Aid, Business Kaleidoscope, Health Fair, Fire Fest, Wildfire Awareness Week and the Child Passenger Safety Program.

To address community-wide risks, Disaster Preparedness materials are made available to all district residents. Living with Fire: A Guide for the Homeowner continues to be the standard educational program for educating the public on living in a fire prone community and providing guidance on the prevention of catastrophic wildfire. This program focuses on living in wildland urban interface areas and how to create a defensible space by managing the types of vegetation and other combustibles that are in the near-home environment.

*Fire Hazards*

For information on fire hazards in Douglas County, refer to Volume I, Chapter 8, Environmental Resources and Conservation Element.

Law Enforcement

In 2011, the Minden Jail was expanded and now includes 130 bed spaces and 9,723 square feet of administrative space. With the completion of the jail expansion, there are now 3.24 beds per 1,000 people in Douglas County, which is based upon the current inventory of 152 beds divided by the 2010 county population of 46,997.

The Nevada Department of Public Safety develops annual Uniform Crime Reports (UCR) to track the volume and nature of crimes in Nevada. The crimes tracked include: 1) Murder and Nonnegligent Manslaughter, 2) Forcible Rape, 3) Robbery, 4) Aggravated Assault, 5) Burglary, 6) Larceny-Theft, 7) Motor Vehicle Theft, and 8) Arson. These are serious crimes by nature and/or volume. Not all crimes, such as Embezzlement, are readily brought to the attention of the police. Also, some serious crimes, such as kidnapping, occur infrequently. Therefore, for practical purposes, the reporting of offenses known is limited to the selected crime classifications because they are the crimes most likely to be reported and most likely to occur with sufficient frequency to provide an adequate basis for comparison. Figure 8.3 includes the annual crime statistics for Douglas County from the Uniform Crime Reports from 2006 to 2011.

**Figure 8.3**
**Douglas County Crime Statistics**

| | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 |
|---|---|---|---|---|---|---|
| **Murder** | 2 | 0 | 1 | 1 | 0 | 2 |
| **Rape** | 24 | 5 | 7 | 10 | 3 | 3 |
| **Robbery** | 2 | 7 | 5 | 9 | 4 | 5 |
| **Assault** | 59 | 57 | 49 | 87 | 54 | 50 |
| **Burglary** | 207 | 202 | 193 | 176 | 176 | 130 |
| **Larceny** | 740 | 663 | 509 | 500 | 605 | 588 |
| **MV Theft** | 61 | 55 | 45 | 30 | 37 | 24 |
| **Arson** | 8 | 10 | 7 | 6 | 8 | 8 |
| **TOTAL** | 1,103 | 999 | 816 | 819 | 887 | 810 |

Source: Nevada Department of Public Safety, Annual Uniform Crime Reports (2006 to 2011)

The Patrol Division has six Sergeants, 38 patrol deputies, and six traffic enforcement positions for a total of 50 personnel. That is approximately .95 officers per 1,000 residents. The national average is 2.5 officers per 1,000 residents. The average response time for all calls of service is approximately 11 minutes. The Patrol Division issues about 5,900 citations per year and responds to approximately 42,500 calls for service and investigates about 451 traffic accidents. The Patrol Division also serves as the Deputy Coroners under Nevada law and investigates approximately 264 death investigations per year.

The Investigation Division has six Investigators assigned to general investigations and four Investigators assigned to narcotics enforcement. The Division is assigned about 1,500 felony crime investigations per year. The narcotics unit initiates about 100 cases per year.

The Administration Division is comprised of command staff and is largely responsible for internal governance. Administration also is comprised of youth services and records management.

The Sheriff's Office has a wide range of specialized services; such as Special Weapons and Tactics (SWAT), Crisis Negotiation, Bomb Squad, K-9, Motors, Boat Patrol, Search and Rescue, School Safety Intervention, and youth educational programs.

Douglas County is also home to the China Springs Youth Camp and Aurora Pines Girls Facility, a treatment center for youth between the ages of 12 and 18 from rural Nevada. The facility helps youth develop the necessary skills to stop the progression of problems caused by delinquent behavior. Residents live in a dormitory setting and attend school at the facility. The school (Jacobsen High) is operated by the Douglas County School District. This facility receives the majority of its funding through the State of Nevada.

*Dispatch and Communications*

Dispatch service is provided by the Douglas County 911 Emergency Services Department (911ES). 911ES is a consolidated, multi-agency regional dispatch center serving Douglas County, Nevada, and Alpine County, California. The center provides full-time dispatch service to the EFFPD, TDFPD, Douglas County Sheriff's Office, Washoe Tribe Police Department, and the Alpine County Emergency Services (Sheriff, Fire and EMS) along with numerous other non-direct service agencies. Center call statistics (calendar year) are as follows:

2010: 66,266 (center total)
Tahoe Douglas Fire= 1,730
East Fork Fire = 4,805
Douglas County Sheriff's Office = 41,008
Washoe Tribal Police Department= 1,895
Animal Control = 1,488

2009: 63,171 (center total)
Tahoe Douglas Fire= 1,750
East Fork Fire = 4,906
Douglas County Sheriff's Office = 40,552
Washoe Tribal Police Department= 2,765
Animal Control = 1,664

2008: 63,556 (center total)
Tahoe Douglas Fire= 1,907
East Fork Fire = 4,897
Douglas County Sheriff's Office= 36,875
Washoe Tribal Police Department= 2,885
Animal Control = 1,540

The Douglas County Technology Services Department, Communications Division, provides emergency and non-emergency communication services for EFFPD, TDFPD, Sheriff's Office, and other Douglas County users. The EFFPD Standards of Cover includes standards for dispatch and communications services.

**Libraries**

Reduced public hours went into effect due to budget shortfalls in 2008. In 2011, public hours were 50 hours per week in Minden and 32 hours per week at Lake Tahoe. Despite reduced staffing levels, library visits and the number of registered library users continues to increase as shown in Figures 8.4 and 8.5.

**Figure 8.4**
**Library Visits**

| Year | No. of Visits |
|---|---|
| 2005-06 | 148,016 |
| 2006-07 | 153,816 |
| 2007-08 | 157,794 |
| 2008-09 | 163,003 |
| 2009-10 | 173,555 |
| 2010-11 | 175,429 |

**Figure 8.5**
**Registered Library Users**

| Fiscal Year | 05-06 | 06-07 | 07-08 | 08-09 | 09-10 | 10-11 |
|---|---|---|---|---|---|---|
| Total Number | 20,597 | 22,122 | 24,412 | 26,913 | 31,913 | 33,915 |
| % of County Pop | 40% | 42% | 47% | 60% | 70.1% | 72.2% |

The Library is governed by a five-member board of trustees appointed by the Board of Commissioners. A Library Director appointed by the Library Board of Trustees supervises the operations of the Library system. The Library of Trustees utilizes a community-based planning process to determine the strategic priorities of the Library.

*Library Facility Needs*

In 2000, the Minden library was expanded and as a result there is .42 square feet per capita, which is still below the recommended average of .6 (per seat for read) and .1 (per seat for technology) square foot per capita. Thus, to resolve existing deficiencies and future growth, the Library needs to expand. The expansion could take place under several scenarios; (a) an expansion of the current location with land acquisition; (b) a new main library at a different location with (1) either utilizing the existing facility or (2) disposing of the existing facility; or (c) utilizing the existing facility and constructing branch libraries.

The 5-year CIP identifies an expansion for the Minden Library of approximately 2,500 square feet to be used primarily for collection shelving and a shipping and receiving area. The project has yet to be fully funded.

There would be an operating impact with a Library expansion or any additional facilities. This impact could be reduced somewhat by co-location of branch facilities with other county departments. In addition, the operating impact of the library expansion could be

substantially reduced if the project included solar lighting for all shelving areas and if the project were to include funding for automated materials handling.

To meet the community Library service needs, both current and into the future, the following facility-related service levels have been identified by the Library and are recommended:

**Figure 8.6**
**Library Facility Needs**

| | |
|---|---|
| **1** | Seating capacity of 185 or 4.1 seats for every 1,000 people served. |
| **2** | Increased public computer access, utilizing both desktop and laptop technology, to provide 65 workstations or 1.5 computers for every 1,000 people served. |
| **3** | Enhanced public programming space, including a large meeting room, dividable into three separate spaces with seating capacity for 300, adequate storage and current AV projection technology. |
| **4** | A computer lab to offer hands-on technology training. |
| **5** | A Teen Zone to provide space specifically for teenagers. |
| **6** | Two enclosed group study rooms for students, tutoring, and similar uses. |
| **7** | Shelving to accommodate an increase to the physical collection of books and AV media with a total collection size of 190,000, excluding digital collections. |
| **8** | Increased incorporation of self-service technologies for improved staff productivity. |
| **9** | Increased volunteer workspace. |

The Douglas County Public Library Long Range Plan, adopted by the Library Board on December 13, 2011, and as amended, is incorporated by reference in its entirety into the Master Plan. The Library Long Range Plan will help the County determine future service and facility needs for the Library.

**Schools**

The Douglas County School District (DCSD) serves all of Douglas County. There are seven elementary schools, two middle schools, one high school, one 7-12 school, an alternative education program (ASPIRE), and one school for adjudicated youth. Figure 8.7 includes a list of schools and 2012 student enrollment numbers.

**Figure 8.7**
**Douglas County School District Facilities**

| School | Grades | 2012 Enrollment |
|---|---|---|
| C.C. Meneley Elementary School, Gardnerville | K-6 | 536 |
| Gardnerville Elementary School, Gardnerville | K-6 | 539 |
| Jacks Valley Elementary School, Jacks Valley | K-6 | 510 |
| Minden Elementary School, Minden | K-6 | 416 |
| Pinion Hills Elementary School, Minden | K-6 | 495 |
| Scarselli Elementary School, Gardnerville | K-6 | 573 |
| Zephyr Cove Elementary School, Zephyr Cove | K-6 | 206 |
| Carson Valley Middle School, Gardnerville | 7-9 | 744 |
| Pau-Wa-Lu Middle School, Gardnerville Ranchos | 7-9 | 599 |
| Douglas High School, Minden | 10-12 | 1,284 |
| Jacobsen High School (Detention Center), China Springs Youth Camp | 7-12 | 63 |
| Whittell High School, Zephyr Cove | 7-12 | 233 |
| ASPIRE, Minden | 7-12 | 75 |
| TOTAL | | 6,273 |

Extensive analysis and demonstration of the need for school facilities is contained in the Douglas County School District Facilities Master Plan, adopted by the DCSD Board of Trustees on March 29, 2010. The Facilities Master Plan, and as amended, is incorporated as a part of this Master Plan. The Facilities Master Plan examines the education suitability, building condition, technology readiness, and site condition of the district's schools and support facilities. The Plan takes into account that effective management of school facilities requires a school's capacity and enrollment to match.

It is important to note that school enrollment numbers have been declining since the 2004/2005 school year (refer to Figure 8.8). Enrollment has declined 13 percent since 2004. In 2008, the Kingsbury Middle School was closed due to declining school enrollment numbers in the Zephyr Cove Regional Area and is now listed for sale.

**Figure 8.8**
**Douglas County School Enrollment**

| School Year | 05-06 | 06-07 | 07-08 | 08-09 | 09-10 | 10-11 | 11-12 |
|---|---|---|---|---|---|---|---|
| Total Enrollment (K-12) | 7,035 | 6,848 | 6,755 | 6,548 | 6,455 | 6,342 | 6,273 |

Despite the fact that enrollment numbers have been in decline, the Facilities Master Plan found that the district's schools, with the exception of the two schools at Lake Tahoe and Pau-Wa-Lu Middle School, will be over 90 percent utilized in ten years, with five schools over 100 percent utilization. In 2008, the Douglas County voters supported a measure to allow for the DCSD to issue general obligation bonds for capital improvement and site acquisition. As a result, work has begun on Pinon Hills, Gardnerville Elementary, and Douglas High School.

## Water and Wastewater

Water and wastewater systems are located throughout Douglas County and operated and maintained by the County, GIDs, special districts, and private property owners. Water and wastewater systems within the County are discussed below.

### Water

Douglas County owns and operates several water systems and provides water service to around 8,000 residents and 230 commercial customers. A complete list of all the water systems in Douglas County is provided in Figure 8.9, followed by a brief description of the major water systems in the County.

**Figure 8.9**
**Public Water Systems in Douglas County**

| Public Water System Name | Population Served | Primary Source | Number of Sources | Source Type |
|---|---|---|---|---|
| Camp Galilee | 30 | Groundwater | 1 | Well(s) |
| Cave Rock Skyland | 1,365 | Surface Water | 1 | Intake(s) |
| China Springs Youth Camp | 92 | Groundwater | 1 | Well(s) |
| Dougas County Lampe Park | 200 | Groundwater | 1 | Well(s) |
| Douglas County Topaz Park | 100 | Groundwater | 1 | Well(s) |
| East Peak Lodge | 2,000 | Groundwater | 1 | Well(s) |
| East Valley Water System | 3,845 | Purchased Groundwater | 1 | Consecutive Connection(s) |
| Edgewood Water Company | 5,695 | Surface Water | 1 | Intake(s) |
| Elk Point County Club | 325 | Groundwater | 2 | Well(s) |
| Foothill Water System | 346 | Groundwater | 2 | Well(s) |
| Gardnerville Ranchos GID | 11,500 | Groundwater | 6 | Well(s) |
| Gardnerville Town Water | 4,500 | Groundwater | 7 | Well(s) |
| Glenbrook HOA | 1,000 | Surface Water | 1 | Intake(s) |
| Holbrook Station RV and MHP | 180 | Groundwater | 1 | Well(s) |
| Indian Hills GID | 5,800 | Groundwater | 1 | Consecutive Connection(s) |
| Johnny's Roadhouse, LLC | 25 | Groundwater | 1 | Well(s) |
| Kingsbury GID | 3,839 | Surface Water | 1 | Intake(s) |
| La Ferme Restaurant | 25 | Groundwater | 1 | Well(s) |
| Logan Creek Estates GID | 60 | Groundwater | 1 | Well(s) |
| Montana | 30 | Groundwater | 2 | Well(s) |
| Mountain View MHP | 45 | Groundwater | 1 | Well(s) |
| North County Water System | 200 | Groundwater | 2 | Well(s) |
| Pinion Pines MHP | 45 | Groundwater | 1 | Well(s) |
| Riverview MHP | 59 | Groundwater | 1 | Well(s) |
| Round Hill GID | 1,200 | Surface Water | 1 | Intake(s) |
| S & J Ventures DBA/Junction Bar | 35 | Groundwater | 1 | Well(s) |
| Seven Eleven | 25 | Groundwater | 1 | Well(s) |
| Sierra Country Estates | 38 | Groundwater | 2 | Well(s) |
| Sierra Estates GID | 160 | Groundwater | 1 | Consecutive Connection(s) |
| Spooner Lake State Park | 207 | Groundwater | 1 | Well(s) |
| Sunrise Estates | 816 | Groundwater | 2 | Well(s) |
| Topaz Lake Water Co., Inc. | 40 | Groundwater | 4 | Well(s) |
| Topaz Ranch Estates GID | 2,100 | Groundwater | 4 | Well(s) |
| Topaz Summit Spring | 25 | Groundwater | 1 | Well(s) |
| Town of Minden | 3,200 | Groundwater | 6 | Well(s) |
| Uppaway Water System | 85 | Groundwater | 2 | Well(s) |
| West Valley Water System | 663 | Groundwater | 3 | Well(s) |
| Williams Ridge Tech. Park | 60 | Groundwater | 1 | Well(s) |
| Zephyr Cove Lodge & Resort | 500 | Groundwater | 3 | Well(s) |
| Zephyr Cove Water Utility District | 1,875 | Surface Water | 1 | Intake(s) |

Source: State of Nevada Public Water Systems Annual Compliance Report for the Year 2010, Nevada Division of Environmental Protection, Bureau of Safe Drinking Water

Douglas County Water Systems

*Cave Rock/Skyland*

Douglas County's Cave Rock/Skyland System serves the areas of Cave Rock, Lincoln Park, Lakeridge, Hidden Woods, Skyland, and Whittel High School. The system serves 530 residential connections and four (4) commercial connections.

The system utilizes surface water from Lake Tahoe and consists of 2, 4, 6, 8 and 10-inch PVC, ductile iron and galvanized pipes, six (6) tanks with a total volume of 1,677,000 gallons, three (3) booster stations, and two (2) intake pumps. The intake extends approximately 1,700 feet into Lake Tahoe. Surface water is treated at the Cave Rock Water Treatment Plant utilizing microfiltration and chlorination. There are three (3) pressure reducing stations separating pressure zones near Lyons/Bedell and Pheasant Gull from lower pressure zones.

Uppaway Estates is also part of the Cave Rock System, but not physically connected. The Uppaway System is supplied by two wells that pump to a 375,000 gallon water storage tank and the distribution system. Uppaway serves 31 residential connections.

*East Valley*

Douglas County's East Valley water system serves East Valley, North County, and Fairgrounds/Sunrise Estates and operates as a single utility fund. The Town of Minden supplies the East Valley Water System under a wholesale agreement between Douglas County and the Town of Minden. Minden delivers water to a point near Heybourne Road and Muller Lane. Douglas County's East Valley wells do not comply with arsenic regulations. Entering into an agreement with Minden to supply water was more cost effective than constructing and operating a treatment plant to treat the East Valley wells.

The water system consists of 6-inch through 30-inch water mains, five (5) storage tanks with a total volume of 4,576,000 gallons, and two (2) booster pump stations. The storage tanks are summarized in Figure 8.10.

**Figure 8.10**
**East Valley Storage Tanks**

| Tank | Nominal Volume (gallons) | Tank | Nominal Volume (gallons) |
|---|---|---|---|
| Johnson Lane (1) | 1,584,000 | Mountain View | 601,000 |
| Johnson Lane (2) | 1,584,000 | Airport | 300,000 |
| Skyline | 507,000 | | |

The South Airport Well has been approved as an emergency back-up well. This well is sampled on a routine basis so that it is available to supply water in the event of an

emergency. The water system maintains three (3) pressure zones: 1) high zone, 2) medium zone, and 3) low zone with nine (9) pressure reducing stations.

The East Valley System is also connected to the IHGID water system. Douglas County and IHGID also entered into an agreement for Douglas County to wholesale water to IHGID. This was a more cost effective option for IHGID compared to constructing and operating a treatment plant to treat their wells to comply with arsenic regulations.

Work is in progress on a 30-inch water line and pump station to connect the East Valley Water System to the North County area and to Carson City. Douglas County and Carson City entered into an agreement for Douglas County to wholesale water to Carson City.

*Fairgrounds/Sunrise Estates*

Douglas County's Fairgrounds Water System is a small ground water system located in the South Carson Valley and serves the Sunrise Estates and Fairgrounds areas. This system includes three (3) wells, one (1) booster station and a 200,000 gallon storage tank.

This water system consists of 6, 8, 12 and 14-inch water mains, one (1) storage tank with a volume of 200,000 gallons, three (3) ground water wells and one (1) booster station with a fire driver to supply pressure and fire flow to the upper zone.

Sunrise Estates Well #2 is the primary well for the Fairgrounds System; this well produces about 450 gpm. The Fairgrounds Well is the alternate well for this system and produces about 100 gpm. Sunrise Estates Well #1 is the Fairgrounds Emergency Back-up Well; this well can only be used to supply Sunrise Estates subdivision and is not capable of filling Fairgrounds Tank.

*North County/Topsy*

Douglas County's North County Water System is a ground water system located in the North County area. This system also provides emergency back-up for a portion of IHGID and Sierra Estates General Improvement District (SEGID)

The water system consists of 6, 8, 10, 12, and 16-inch PVC water mains, two (2) wells and a two (2) million gallon storage tank. North County Well #977-02 is the lead well. North County Well #977-01 operates as the system back-up or lag well as needed. Both wells pump directly to the North County tank and distribution system; this ensures proper pressure and fire protection needs. There are two (2) pressure zones.

*West Valley*

The West Valley system serves Walley's, Genoa Lakes, Eagle Ridge and Montana. The West Valley service area consists of water mains, five (5) water tanks with a total volume

of 2,983,000 gallons, six (6) wells and booster pump stations, and multiple pressure zones. The storage tanks are summarized in Figure 8.11.

**Figure 8.11**
**West Valley Storage Tanks**

| Tank | Nominal Volume (gallons) | Tank | Nominal Volume (gallons) |
|---|---|---|---|
| Sierra Shadows | 410,000 | Lower Montana | 500,000 |
| Genoa Lakes | 730,000 | Upper Montana | 1,034,000 |
| Eagle Ridge | 309,000 | | |

There are two (2) wells on the east side of Jacks Valley Road that supply the system in the area of Montana, and two (2) booster pumps that pump from the lower tank to the upper tank. There are six (6) pressure zones in the Montana system.

Montana is connected to the Eagle Ridge/Genoa Lakes/Sierra Shadows/Walley's areas by approximately 12,700 feet of 12-inch PVC water main. Eagle Ridge has two (2) booster pumps which pump to the Eagle Ridge storage tank. There are two (2) wells in Genoa Lakes, one (1) well at Walley's, and three (3) booster pumps at the Genoa Lakes storage tank which provide pressure to Genoa Lakes and pump to the storage tank at Sierra Shadows.

The Walley's well also pumps to the Sierra Shadows tank. The Genoa Lakes area is connected to Sierra Shadows and Walley's by approximately 12,000 feet of 6, 8 and 10-inch PVC water main.

*Foothill*

Douglas County's Foothill Water System is a groundwater system that serves Job's Peak and Sheridan Acres. The water system consists of 4, 6, 8, and 10-inch PVC pipe, asbestos-cement pipe, ductile iron pipe, two (2) storage tanks with a total volume of 866,000 gallons, two (2) wells at Job's Peak and one (1) well at Sheridan Acres. The water system operates with nine (9) pressure zones in Job's Peak and one (1) zone in Sheridan Acres. A treatment plant in Job's Peak came on-line in May 2011 to treat low pH of the well water. The same type of treatment plant operates at Sheridan Acres. Job's Peak and Sheridan Acres are connected at the Sheridan Acres water tank to allow Job's Peak to provide water to Sheridan Acres during peak demands.

*Zephyr Cove Water Utility District (ZCWUD)*

Douglas County's ZCWUD utilizes Lake Tahoe surface water and serves Marla Bay, Zephyr Cove, Zephyr Knolls and Zephyr Heights. The system source is surface water from Lake Tahoe. The intake extends approximately 1,200 feet into Lake Tahoe. Raw water is pumped to the ZCWUD Treatment Plant for treatment with ozone and sodium

hypochlorite. Two (2) high lift pumps lift potable water to a storage tank above to allow the system to operate by gravity.

The water system consists of distribution water mains, one (1) storage tank with a volume of 626,000 gallons, and five (5) pressure reducing stations to maintain pressures throughout this system. The system operates as a dual system. The 8-inch ductile iron main provides fire protection. The 4-inch steel, 4-inch PVC, 2-inch steel, and 1-inch steel lines provide domestic service. The capital improvement plan for ZWUD includes replacing the dual system with pressure reducing zones on the 8-inch line and replacement old, failing smaller pipes.

Public-Owned, Non-County Facilities

*Gardnerville Ranchos General Improvement District (GRGID)*

GRGID serves approximately 3,500 residential and 23 commercial customers in the Gardnerville Ranchos Community Plan. The system utilizes seven wells with a combined production of 4,800 gpm without its two booster stations; the first booster station is capable of 1,500 gpm, and the second capable of 1,600 gpm. System storage is provided by a 1.5 million gallon tank and a 3 million gallon tank.

*Indian Hills General Improvement District (IHGID)*

The IHGID public water system serves residential, commercial, and other customers in the Indian Hills/Jacks Valley Community Plan. The Ridgeview water system, previously owned and operated by Douglas County, has been consolidated into the IHGID water system. The IHGID system contains 12 wells and 3 booster stations; however, only seven wells are currently active. As of October 2011, IHGID receives a majority of its water supply from the Town of Minden via an intertie with the Town of Minden and Douglas County water systems. It is anticipated that further wells will be put in an inactive state and/or abandoned with the connection to the Minden system. There are currently plans to abandon all inactive wells in the District. A network of five storage tanks exists for the system, including two 188,000-gallon water storage tanks located at the Hobo Booster Station, two 420,000-gallon water storage tanks and one 600,000-gallon water storage tank.

*Logan Creek Estates General Improvement District (LCEGID)*

The LCEGID water system serves approximately 22 residential customers. The system source is a community well that pumps to a 140,000 gallon storage tank.

*Round Hill General Improvement District (RHGID)*

RHGID serves approximately 456 residential and 46 commercial customers in the Round Hill Community Plan. The system utilizes Lake Tahoe as its source water and the water

is then treated via filtration with a maximum capacity of 400 gpm. Total system storage of 1.75 million gallons is provided with three 500,000 gallon tanks and one 250,000 gallon tank.

*Sierra Estates General Improvement District (SEGID)*

This system is located in the Indian Hills/Jacks Valley Community Plan and served 67 residential customers in 2011. The system consists of one well located within the Eagle Valley groundwater basin which is capable of producing 150 gpm. The District has one 60,000 gallon storage tank. Douglas County's North Valley water system serves as their emergency backup water supply.

*Town of Minden*

The Town of Minden public water system currently consists of six active wells with plans for at least two more wells within the next two years. Storage for the public water systems consists of one 2,500,000 gallon water storage tank located to the east of Town. The Town of Minden currently provides wholesale water to the Douglas County East Valley Water System and IHGID with plans to provide water to the Douglas County North Valley Water System and Carson City by 2013. An intertie also exists between the Town of Minden and the Gardnerville Town Water Company, which allows the two systems to share storage and capacity in an emergency.

*Kingsbury General Improvement District (KGID)*

KGID, a Tahoe-based system, serves the portion of the Summit Village and Tahoe Village areas which extends into the Sierra Regional Plan.

*Topaz Ranch General Improvement District (TREGID)*

This system serves a portion of Topaz Ranch Estates. The system consists of several wells and tanks, although little is known about its supply, pumpage or storage capabilities.

Private Systems

*Gardnerville Town Water Company (GTWC)*

The GTWC is a non-profit cooperative owned by the property owners and residents of Gardnerville. GTWC (PWS #65) consists of approximately 31 miles of distribution main, 2 pressure zones, 7 municipal wells, a 1.5 million gallon water storage tank, a 2.6 million gallon water storage tank, and a booster pump station. The water system served 2,000 residential customers and 250 commercial customers within the GTWC service area in 2011. The Gardnerville Town Water Company currently has one emergency interconnection with the Town of Minden water system and is planning a second

emergency interconnection with the Town of Minden water system. Planning is underway for an additional booster station to increase capability to large commercial buildings and expansion of service area south of Gardnerville to areas of Douglas County within the adopted State Engineer service area for GTWC.

*Sierra Country Estates*

The Sierra Country Estates water system is in the Foothill Community Plan and operates as a privately owned and operated water system. The components include two wells with a combined production of 200 gpm and a 235,000 gallon steel tank. This volume includes additional storage capacity to serve the adjacent Sierra Ranchos Estates subdivision.

*Williams Ridge Technology Park*

This system presently serves the Aervoe-Pacific buildings at the Williams Ridge Technology Park in the East Valley Community Plan. It consists of a 225,000 gallon steel water tank and two wells. The primary well is capable of producing approximately 150 gpm.

*Topaz Lake Systems*

According to the 1991 "Topaz Area Water and Wastewater Master Plan", there are two semi-public systems in the Topaz Lake Community Plan, Topaz Lake Water Company and the K & K Water Company. Each of these systems has one well. At the time of the study, seven lots were being served by the K & K Water Company, and the Topaz Lake Water Company was serving 18 lots.

An additional private system, the Topaz Lodge Water System, serves lodge facilities in the Topaz Lake community. This system consists of two wells with a total pumping capability of 110 gpm and a 300,000 gallon storage tank.

**Wastewater**

Wastewater systems are located throughout Douglas County and operated and maintained by the County, GIDs, special districts, and private property owners. They are described below.

*Minden-Gardnerville Sanitation District (MGSD)*

The MGSD Wastewater Treatment Facility is located in Minden and serves the Towns of Minden and Gardnerville and by contract, the Gardnerville Ranchos area, as well as other developments, such as the Bently Science Park, which are not located within the previously-mentioned entities' boundaries. The secondary treated effluent is stored in 600 acre-foot reservoirs located on Muller Lane. Effluent disposal is by irrigation on

approximately 2,000 acres of land, the Gallepi Ranch, former Dangberg Ranch, and Bently property, which are north of the treatment facility.

*Indian Hills General Improvement District (IHGID)*

The IHGID Wastewater Treatment Facility is located in the southern portion of the district and serves the Indian Hills/Jacks Valley community as well as portions of the Genoa community. Effluent is stored in a series of storage ponds. Disposal of effluent is on the Sunridge Golf Course located east of Highway 395.

*North Valley Wastewater Service Area (Douglas County)*

The North Valley Wastewater Service Area (NVWWSA) currently encompasses the regions of East Valley/Johnson Lane, North County, Airport (plus surrounding commercial and industrial), Walley's, Genoa, Genoa Lakes and Canyon Creek/Montana. The Douglas County Sewer Master Plan: North Valley Wastewater Service Area, adopted by the Board of Commissioners in September 2010, was developed to help the County understand the capabilities and limitations of the existing collection system and identify necessary improvements to accommodate the future system needs.

*Incline Village General Improvement District (IVGID)*

The IVGID Treatment Facility is located in the Tahoe Basin (Washoe County), and the District disposes of its treated effluent within an engineered wetlands area adjacent to the North Valley Wastewater Treatment Facility and through sprinkler irrigation of agricultural fields in Jacks Valley.

*Round Hill General Improvement District (RHGID)*

RHGID, a Tahoe-based system, collects wastewater from the area in the Round Hill Community Plan. RHGID contracts with DCSID (not affiliated with Douglas County) for sewer treatment and disposal services.

*Douglas County Sewer Improvement District No. 1 (DCSID)*

The DCSID Treatment Facility is located in the Lake Tahoe Basin and serves five separate Districts: KGID, RHGID, Elk Point Sanitation District, Tahoe-Douglas District, and DCSID #1. The Facility has a rate capacity of 3.75 million gallons of wastewater per day. After treatment, the reclaimed wastewater is pumped out of the Lake Tahoe Basin to the Carson Valley, to either the Park Cattle Company Land Application Site or Bently Reservoir. Effluent is stored at the Bently Reservoir until it is used to irrigate alfalfa at the Bently Agrowdynamics Land Application Site. The Buckeye Creek effluent storage reservoir is currently off-line.

*Tahoe Douglas Sewer Improvement District (TDSID)*

TDSID is a sewer collection district on the east shore of Lake Tahoe. The District maintains 19 pump stations and 40 miles of sewer line.

*Private Package Systems*

- Topaz Lodge Wastewater Treatment System: The Topaz Lodge in the Topaz Lake Community Plan is served by a package treatment plant with a secondary treatment process, extended aeration, with filtration and chlorination. Effluent disposal is through a leach field. The rated capacity of the treatment plant is 0.025 mgd which, according to the "Topaz Lake Area Water & Wastewater Master Plan" can be reached on a busy weekend day. This facility serves only the Topaz Lodge; all other uses in the Topaz Region are served by individual sewage disposal systems.

- Williams Ridge Technology Park: A package treatment plant serves the Williams Ridge Technology Park under a NDEP discharge permit.

*Kingsbury General Improvement District (KGID)*

KGID, a Tahoe-based system, collects wastewater from the portion of the Summit Village and Tahoe Village areas which extends into the Sierra Regional Plan. KGID contracts with DCSID (not affiliated with Douglas County) for sewer treatment and disposal services.